# EXECUTIVE SUMMARY

## AIRCRAFT ACCIDENT INVESTIGATION
## MQ-1B PREDATOR, S/N 05-3137
## NEAR KANDAHAR AIRFIELD, AFGHANISTAN
## 9 DECEMBER 2010

On 9 December 2010, at 0335 Zulu (Z) time, the Mishap Remotely Piloted Aircraft (MRPA), an MQ-1B Predator, serial number (S/N) 05-3137, departed controlled flight and impacted the terrain approximately 22 nautical miles (nm) northeast of Kandahar Air Base (KAF). The Predator was an asset of the 3d Special Operations Squadron, 27th Special Operations Wing, Cannon Air Force Base, New Mexico (NM). At the time of the mishap the MRPA was flown by a Launch and Recovery Element (LRE) crew from the 62d Expeditionary Reconnaissance Squadron, 451st Air Expeditionary Wing, KAF, Afghanistan. There were no injuries, deaths, or reported non-government property damage as a result of the crash. The MRPA was destroyed with its loss valued at $4,400,000.

The MRPA departed KAF on 8 December at 0702Z to fly a sortie in support of Operation ENDURING FREEDOM. On 9 December at 0332Z, a Mission Control Element (MCE) crew assigned to the 2 SOS, Nellis AFB, Nevada (NV), accomplished a successful handoff of the MRPA to the LRE crew. While descending through approximately 8000 feet above ground level (AGL), the Mishap Pilot (MP), intending to press the landing configuration switch, located on the top left side of the pilot control stick, inadvertently disabled the stability augmentation system (SAS) by pressing the SAS switch, located on the top right side of the pilot control stick. Once SAS was disabled the aircraft initially pitched down to -18 °. The MP responded by applying a pitch up command resulting in the aircraft tracking nose up to +28°. The excessive nose up pitch caused airspeed to decrease rapidly resulting in a stall and a subsequent nose low attitude of -41.8°. While descending, airspeed increased to approximately 200 knots indicated airspeed (KIAS). The MP re-enabled the SAS in spite of a Technical Order (T.O.) 1Q-1(M) B-1, WARNING informing crewmembers that SAS should only be turned on after returning the aircraft to a straight and level attitude (+/- 5° roll and +/- 5° pitch).

When SAS was re-enabled, outside the recommended range, the aircraft pitch trim was set at -41.8° nose low per internal software logic that interprets aircraft attitude as the intended control surface deflection. The MP attempted to bring the MRPA to level flight by pulling back on the control stick. The MRPA momentarily increased pitch but never reached level flight. The MP never attempted to change the pitch trim and never moved the control stick to the full aft position. If applied simultaneously, these control inputs would have allowed the aircraft to achieve level flight, completing the stall recovery.

The Accident Investigation Board (AIB) President determined, by clear and convincing evidence, the cause of the mishap was a loss of aircraft control due to the MP's failure to apply stall recovery procedures in accordance with published flight manual guidance. The AIB President found, by a preponderance of evidence, the MP's lack of knowledge of the SAS and associated T.O. WARNINGS and CAUTIONS substantially contributed to the mishap.

*Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from the accident, nor may such information be considered an admission of liability of the United States or by any person referred to in those conclusions or statements.*